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# The Impact of Two Different Conditioning Programs on Fitness Characteristics of Police Academy Cadets



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# Introduction

- Tactical athletes serve in a physically demanding occupation<sup>1</sup>
- Adequate conditioning is needed as preparation for occupational duties<sup>1</sup>
- Trainees have an increased risk of injury<sup>2,3,4</sup>
  - Recruiting and training a new police officer: \$85k<sup>9</sup>
- Used adhoc /randomised PT
- Would a structured periodised program be better?



# Methods

- Design
  - Retrospective data of Police Cadet training collected pre- and post- training programs
- Intervention
  - 6 month voluntary physical fitness training
  - 2 programs
    - Random, “workout-of-the-day,” 4 classes (n = 65)
    - Periodised, 1 class (n = 25)





# Methods

- Anthropometric Measures
  - Body weight / Fat mass / Lean body mass
- Muscular Fitness Measurements
  - Bench press 1RM
  - Push-up reps and Sit-ups in 1 min
  - Vertical jump height / Power production
- Metabolic Fitness Measures
  - Anaerobic sprint (300 m) / Aerobic run (2.4 km)



# Methods

- Statistics
  - Paired t-test within group changes
  - Independent sample t-tests for between group differences
  - ANOVA for between individual RTG and the PG differences
- Ethical approval provided by:
  - UCCS IRB (15-074)
  - BUHREC (RO 1927)

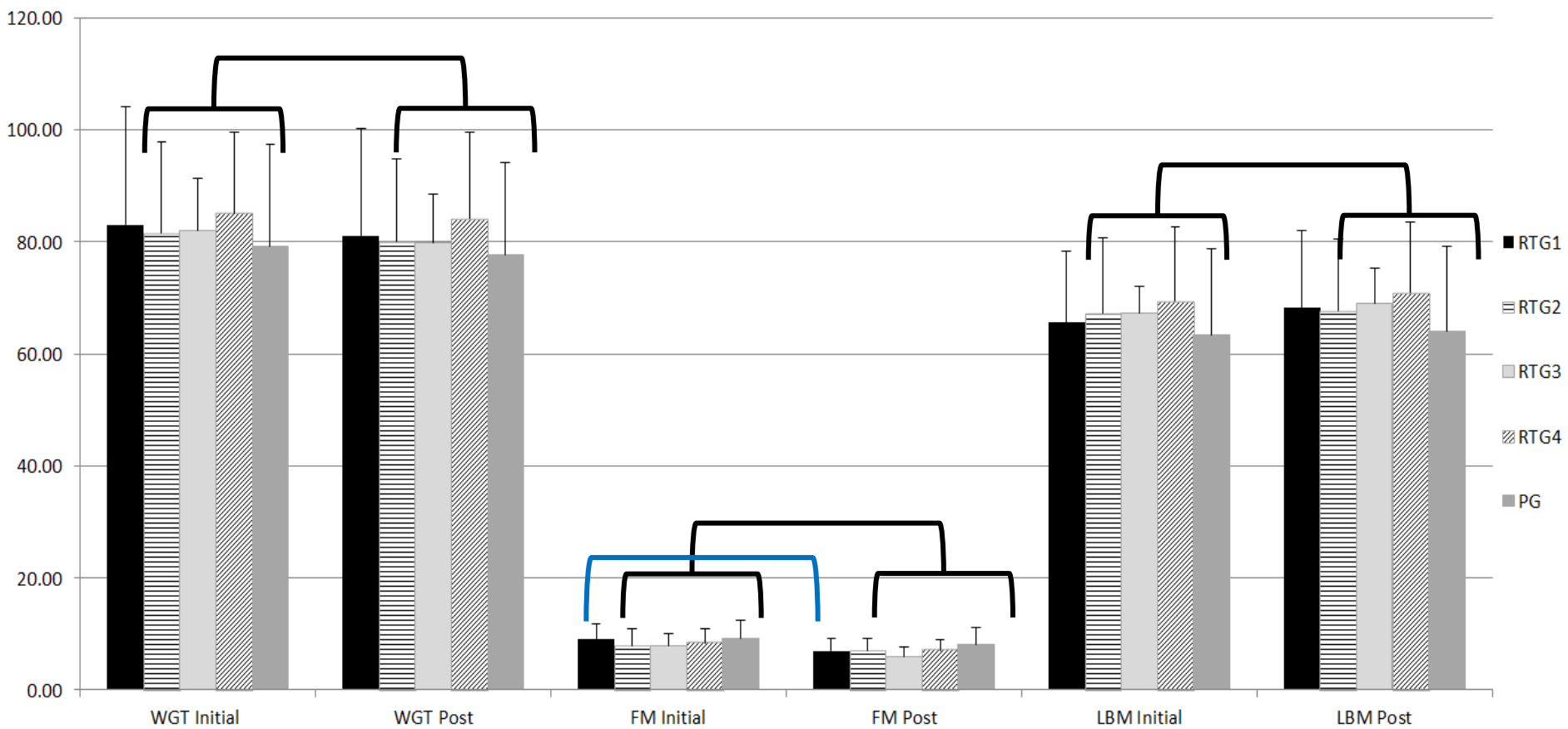


# Results

- 4 RTG (n=65),
  - age= $28.96 \pm 6.34$  yrs
  - weight= $79.44 \pm 18.06$  kg
  - LBM= $63.41 \pm 15.45$  kg
- 1 PG (n=25),
  - age= $21.76 \pm 5.37$  yrs
  - weight= $83.15.66$  kg
  - LBM= $67.55 \pm 11.62$  kg



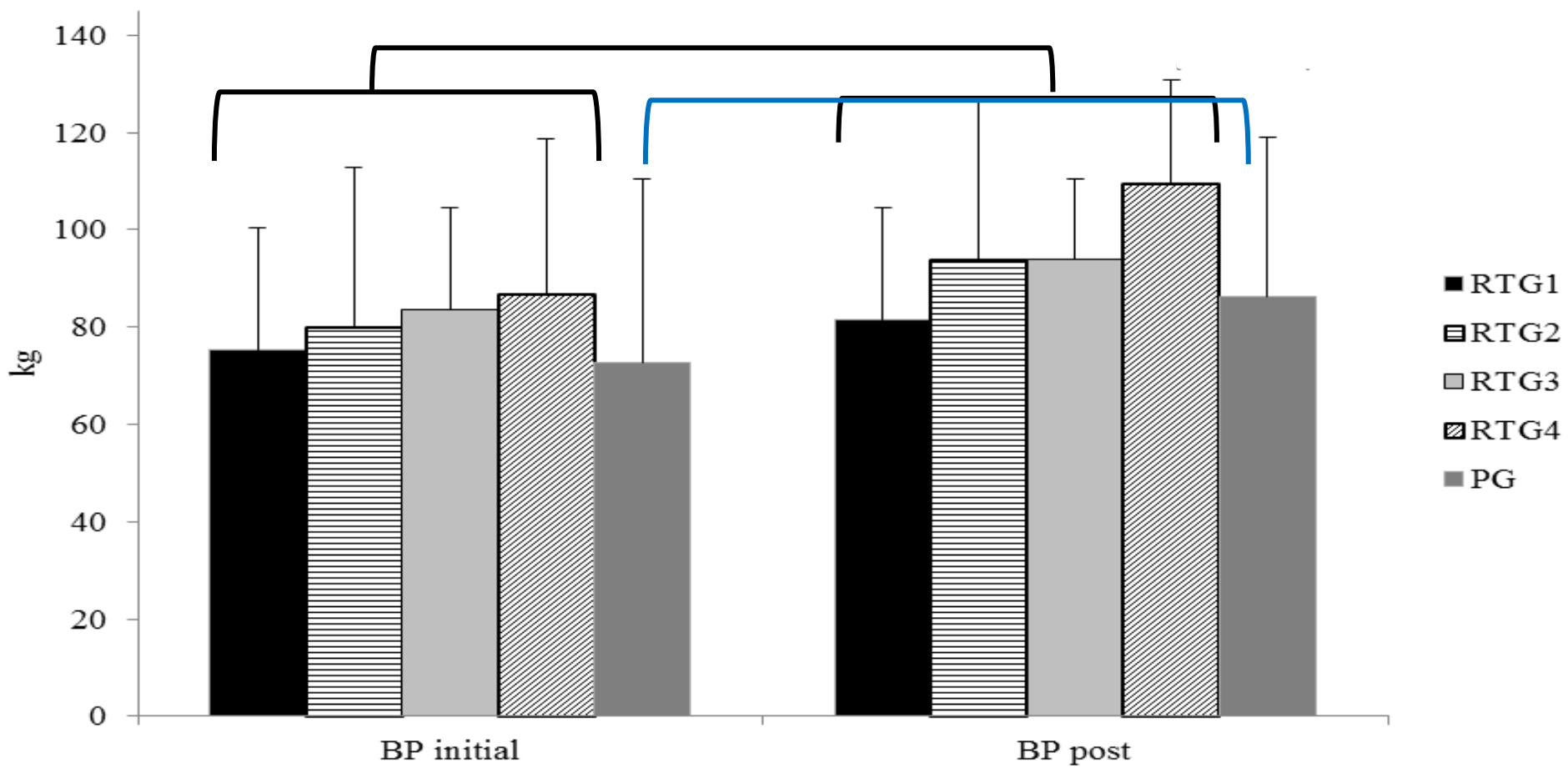
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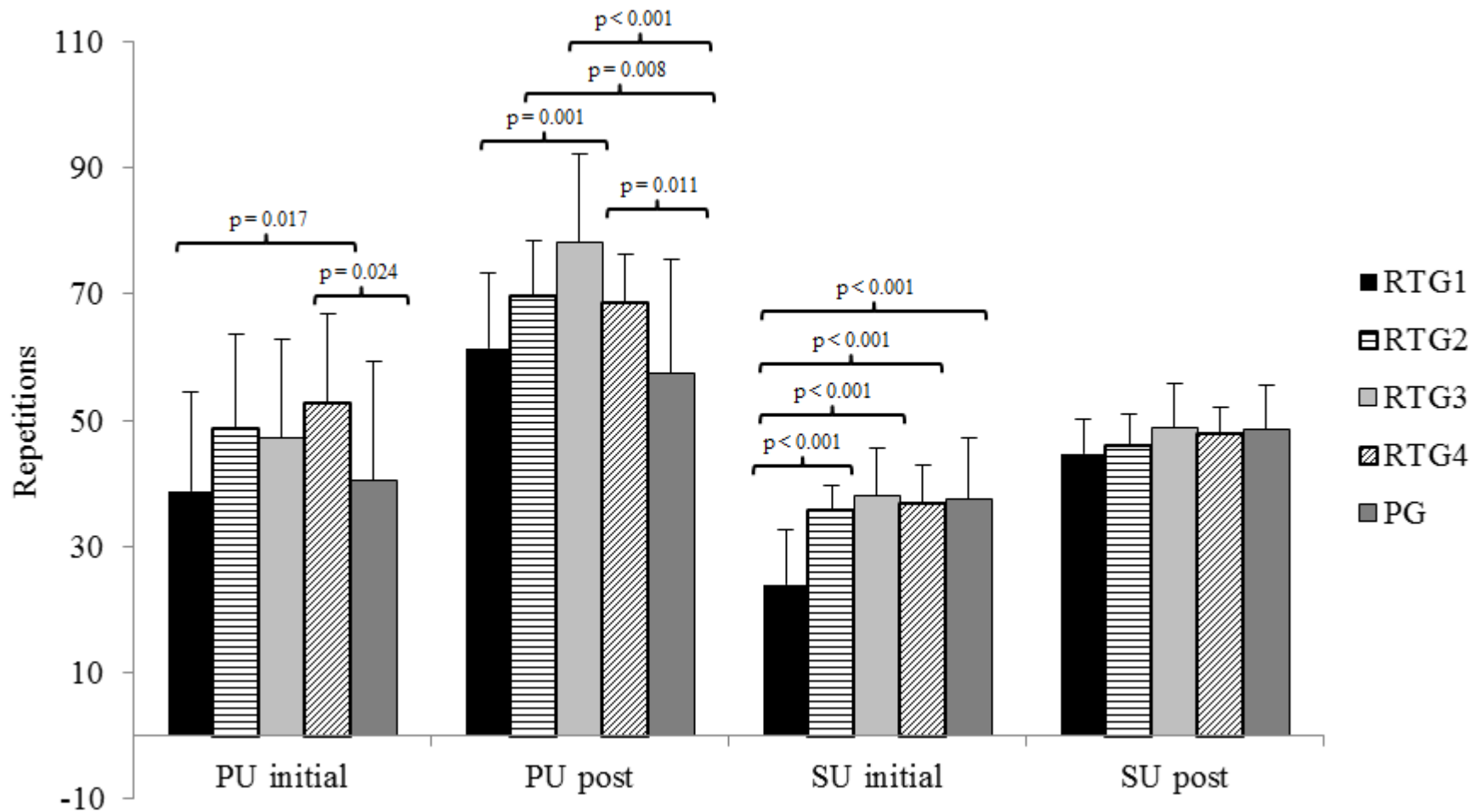






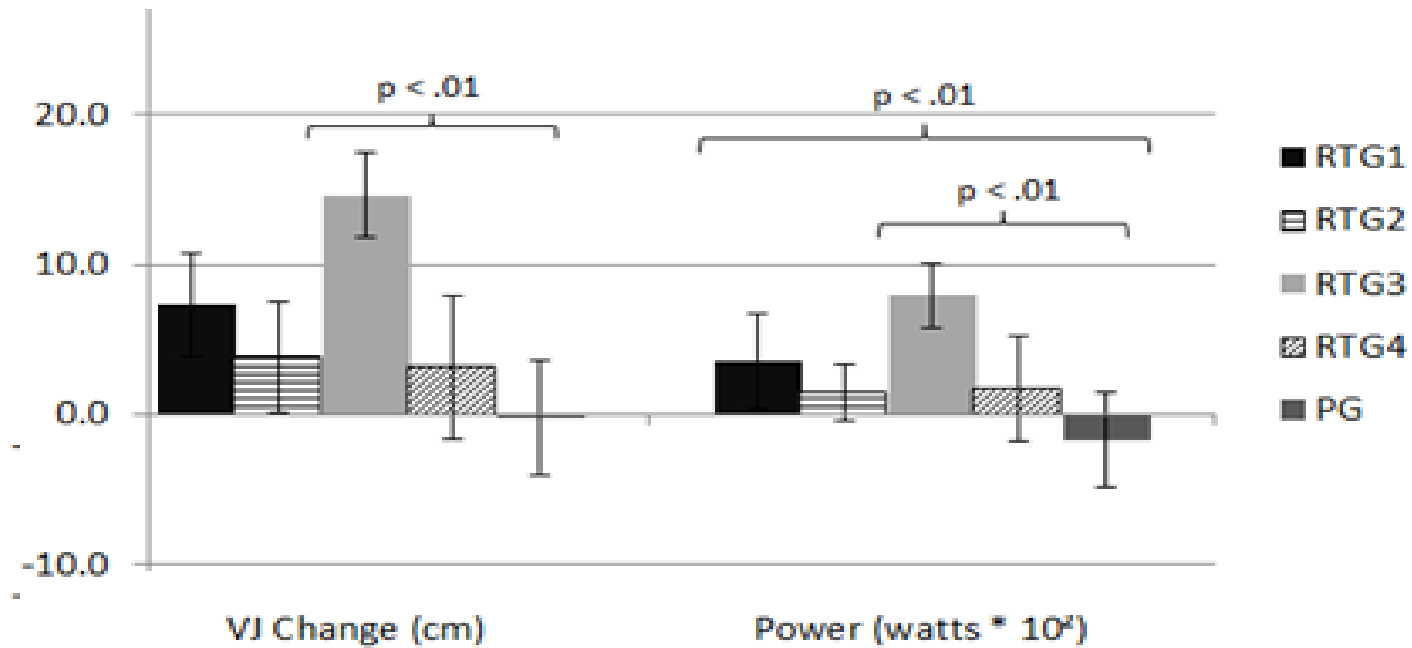
# Results





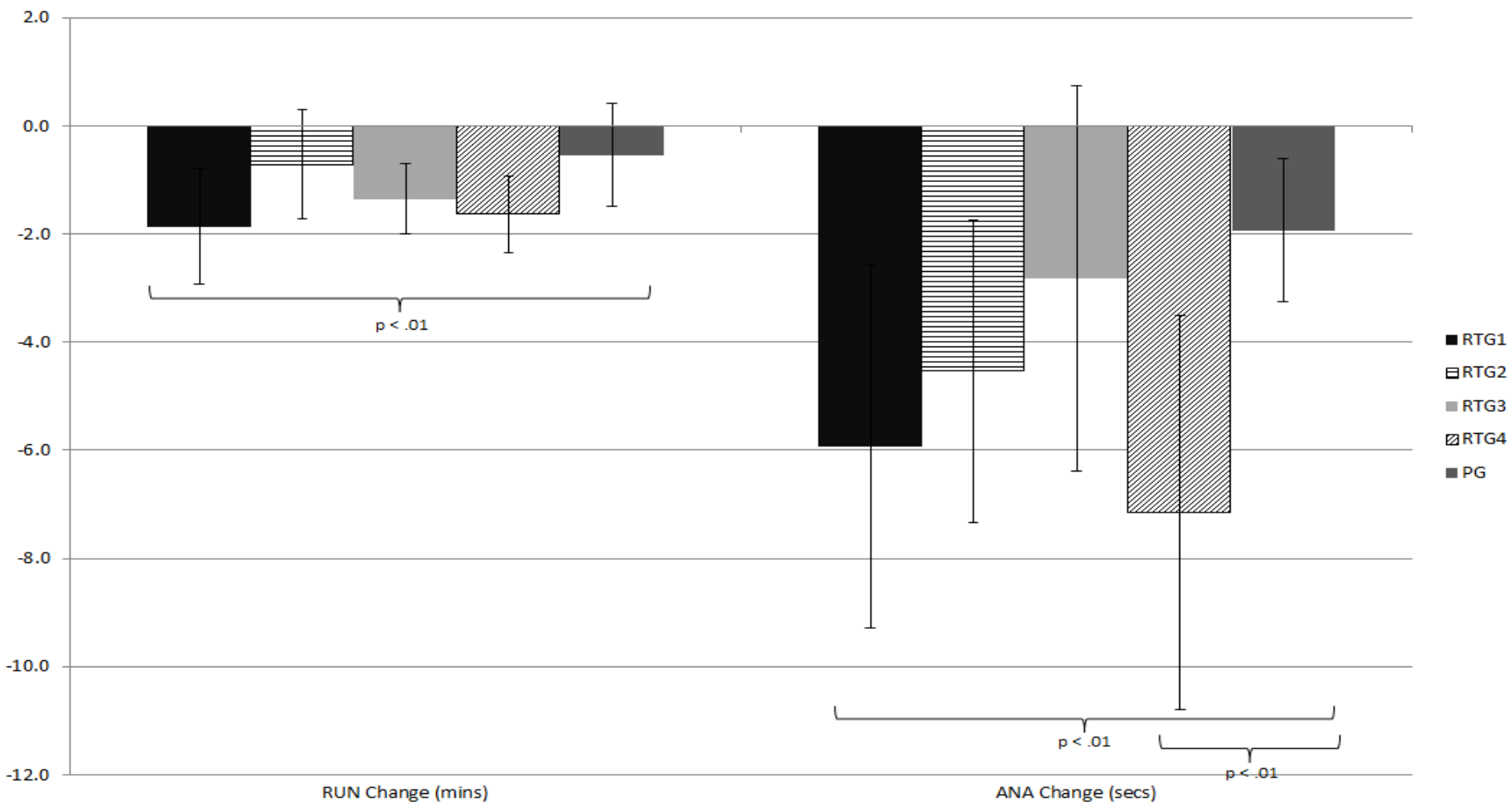


# Results





# Results







# Discussion

- RTG and PG approaches both resulted in improvements
  - In general RTG > PG
- Previous research has shown periodised programs to be of greater benefit than a traditional basic training program in a military population<sup>5,7</sup>
  - Push-up and sit up repetitions, long distance runs
  - Injury rate, attrition rate, and pass rate on a specific aggregated military fitness testing standard



# Conclusion

- Standard Periodised programs may not be as effective for tactical athletes who are required to perform across a spectrum of activities
- PT programs – regardless of format – can improve the physical fitness of tactical personnel
  - **PT is of benefit to new trainees and should remain part of their initial training**



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